

32. On the Skull of an extinct Mammal related to *Eluropus*  
from a Cave in the Ruby Mines at Mogok, Burma.  
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The rare and remarkable mammal *Eluropus*, now confined to the highlands of eastern Thibet, is evidently the survivor of a group which must have had a wide geographical range in comparatively modern geological times. It is so completely intermediate between the Procyonidæ and the Ursidæ, that it is sometimes placed in the one family †, sometimes in the other ‡; and its relationships to the Pliocene *Hyænarcos* are so obvious §, that it must doubtless be regarded as a somewhat modified survivor of the common stock from which the Procyonidæ and Ursidæ have diverged. No closely related fossil forms, however, have hitherto been recorded; and the recent discovery of a skull of an allied extinct species is therefore of interest.

The new specimen (text-fig. 1) was obtained from a cave at the ruby mines, Mogok, Upper Burma, by Mr. A. L. Bacon, and brought as a gift to the British Museum by Mr. F. Atlay. The skull lacks both zygomatic arches and the anterior end of the palate with the incisors and three of the premolar teeth. It must, in fact, have lain exposed for some time in the cave; for the whole of the sagittal crest has been gnawed away by a rodent, evidently a porcupine ||, and there are similar tooth-marks along the lambdoidal border and other parts of the occiput. Otherwise the fossil is well preserved and all its characteristic features are shown.

Although it is not mineralised, the bone is remarkably dense and heavy, as in the skull of *Eluropus melanoleucus* ¶. Nearly all the sutures between the elements are closed, and the specimen represents a fully adult individual, which was slightly larger and more robust than the described examples of the existing species. It agrees with the latter in all essential respects, such as the

\* For explanation of the Plate see p. 428.

† E. Ray Lankester, "On the Affinities of *Eluropus melanoleucus*," Trans. Linn. Soc., Zool., ser. 2, vol. viii. (1901), pp. 163-172, pls. xviii.-xx.

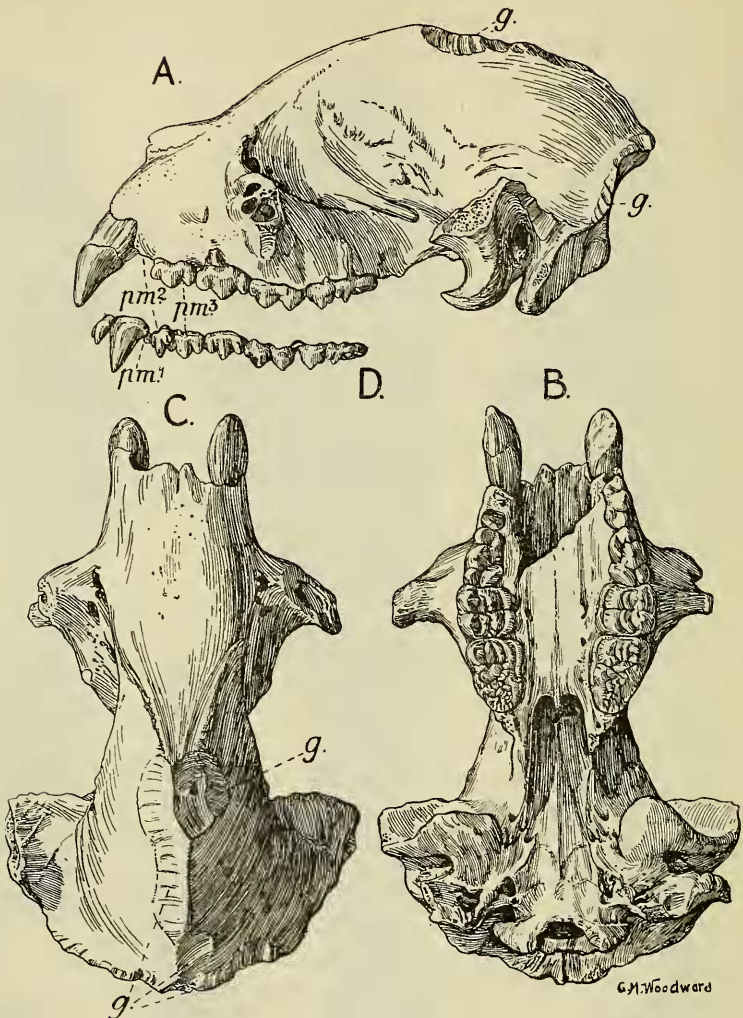
‡ K. S. Bardenfleth, "On the Systematic Position of *Eluropus melanoleucus*," Mindeskrift for Japetus Steenstrup (1913), art. xvii.

§ H. Winge, E Museo Lundii, vol. ii. (1896), pt. ii. no. 2, p. 62.

|| Similar gnawing of fossil bones has been noticed by R. Lydekker, "The Fauna of the Karnul Caves," Paleont. Indica, ser. 10, vol. iv. (1886), p. 25.

¶ E. Ray Lankester, *loc. cit.* p. 165.

Text-figure 1.



A. C.—*Aelureidopus baconi*, gen. et sp. nov.; imperfect skull from the left lateral (A.), palatal (B.), and upper (C.) aspects; one-quarter nat. size.  
 g. Marks of gnawing by rodents, probably porcupines.

D.—*Aeluropus melanoleucus* A. Milne-Edw.; left upper dentition, outer aspect; one-quarter nat. size.

pm. 1-3. First, second, and third premolars.

disposition of the basicranial foramina, the ending of the palate posteriorly between the last molars, the position of the infra-orbital foramen on the cheek, and the absence of a postorbital prominence. It differs only in its steeper frontal profile and certain minor characters. The inner face of the stout mastoid process, for example, is irregularly ridged, not smooth as in *Eluropus*. The foramen which pierces the inner wall of the lachrymal pit in the existing species, is behind this pit in the fossil.

The molar and premolar teeth, so far as preserved, agree closely with those of *Eluropus*, and exhibit only a less marked crimping and less tendency to subdivision of some of the cusps. Except these features, there is nothing to remark about the molars (Pl. I. figs. 1 A-C, *m.* 1, *m.* 2). The upper sectorial (*pm.* 4) is noteworthy for the simple and robust character of its antero-internal cusp or protocone. The third premolar (*pm.* 3) is preserved only on the left side and agrees precisely with that of *Eluropus*, but is relatively a little larger. Even in the existing genus the space for the first two premolars is so short that the double-rooted *pm.* 2 is thrust crosswise and *pm.* 1 is reduced to a single minute cusp (Pl. I. fig. 2); but in the imperfect fossil, which does not retain either of these teeth, the corresponding space is still shorter. The bone is broken away on the right; but it seems to be sufficiently well preserved on the left to show that only one single-rooted premolar originally occupied this position. At least, a single socket of moderate size fills the whole of the space between *pm.* 3 and the canine. The canine (*c.*), broken on the left, but completely preserved on the right side, closely resembles that of *Eluropus*, even to the faint crimping of its posterior keel; it is, however, slightly more robust than in the described specimens of the existing species.

Some of the principal measurements of the fossil, in fractions of a metre, are as follows:—

	M.
Length from anterior border of nasals to posterior face of occipital condyles.....	0·25
Maximum width between outer borders of mastoid processes, about .....	0·18
Maximum width of basioccipital between tympanic bullæ.....	0·043
Frontal width at postorbital point.....	0·066
Depth of snout from alveolar border above <i>pm.</i> 3, about .....	0·075
Depth between alveolar border and beginning of sagittal crest, about .....	0·135
<i>M.</i> 2—maximum length .....	0·038
"      width .....	0·029
<i>M.</i> 1—      "      length .....	0·027
"      width .....	0·031
<i>Pm.</i> 4—      "      length .....	0·029
"      width .....	0·021
<i>Pm.</i> 3—      "      length .....	0·023
"      width .....	0·014
Canine—      "      length of base .....	0·023
"      width of base .....	0·016

The fossil from Mogok, therefore, differs essentially from the skull of the existing species of *Eluropus* in the shortness and bluntness of the snout, with the consequent reduction of space

for the anterior premolars. It remains only to decide whether these differences are to be regarded as of generic or of specific value. If the anterior premolars were merely reduced in size, there need be no hesitation in adopting the latter alternative; but as pm. 2 differs fundamentally in having only a single root while pm. 1 was probably absent, I am inclined to refer the fossil to a distinct genus. I propose that this genus be named *Ælureidopus*, and defined from *Æluropus* by the presence of only three upper premolars of which the foremost has a simple root. The species represented by the skull now described may be appropriately named *baconi* after its discoverer.

#### EXPLANATION OF PLATE I.

- Fig. 1. *Ælureidopus baconi*, gen. et sp. nov.; left upper dentition from the outer (A), lower (B), and inner (C) aspects, partly restored from the right side of the fossil, nat. size; c. canine; pm. 2, single socket for second premolar; pm. 3, 4, second and third premolars; m. 1, 2, first and second molars.
- Fig. 2. *Æluropus melanoleucus* A. Milne-Edw.; left upper canine (c.) and first to third premolars (pm. 1-3), lower aspect, nat. size.